

IN THE DRAWINGS:

Pursuant to the enclosed separate Letter to the Examiner Requesting Approval of Drawing Changes, amendment to FIG. 3 is respectfully requested.

REMARKS**INTRODUCTION:**

In accordance with the foregoing, the Specification and drawings have been amended as indicated, elected claims 1, 2, 8, and 37 have been amended, and claims 40-42 have been added. Withdraw claims 7 and 19 have been amended to depend from linking elected claims for the purposes of later examination. No new matter is being presented, and approval and entry of the foregoing amendments and new claims are respectfully requested.

Claims 1-42 are pending, and claims 1-5, 8, 9, 12-14, 16-18, and 37-42 are under consideration.

OBJECTIONS TO THE DRAWINGS:

In the Office Action at page 2, the Examiner objects to the drawing change requested in the Amendment filed March 26, 2004 under 37 CFR 1.121(f) as the Examiner believes that the changes introduce new matter. As discussed with the Examiner during the interview, the original disclosure does support the features as presented in the Amendment filed March 26, 2004. However, in order to more closely correspond with the disclosure in the specification as filed, such as at paragraphs 0017, 0026, and 0028, FIG. 3 is again presented in order to show the generation of the track cross signal (TCS) and the track error signal (TES) from the processing portions 40, 30 as shown in FIGs. 6 and 5. As suggested by the Examiner in the interview, a junction has been added to conceptually show the comparison of the output TCS and TES to produce the seek direction detecting signal, which is disclosed in at least the example in paragraph 0028, and more broadly recited in at least claims 1 and 5 as presented in the application as filed. As such, it is respectfully submitted that FIG. 3 as presented herein is also supported by the specification as filed, and that the Examiner reconsider and withdraw the objection.

OBJECTION TO THE SPECIFICATION:

On page 3 of the Office Action, the Examiner objects to the inclusion of the number "100" in the specification as representing new matter, and to the description of the second signal processing unit as set forth in paragraph 0026, as amended. As discussed with the Examiner in the interview, paragraphs 0017 and 0026 have been amended as indicated since the specification is otherwise clear to the recited invention without additional description. As such, it is respectfully requested that the Examiner reconsider and withdraw the objection.

REJECTION UNDER 35 U.S.C. §112:

In the Office Action at pages 3-4, the Examiner rejects claims 2-5 under 35 U.S.C. §112, first paragraph, and for introducing new matter as set forth in the Office Action. This rejection is respectfully traversed and reconsideration is requested.

As discussed with the Examiner in the interview, paragraphs 0017, 0026, and 0028 provide at least examples sufficient to support claims 2-5. However, in order to clarify and more broadly present claim 2, claim 2 has been amended as indicated. As such, it is respectfully submitted that claims 2-5 remain compliant with the requirements of 35 U.S.C. §112, first paragraph in as much as the specification, as filed, contained a description of examples of second signal processing portions which directly and indirectly output seek direction detecting signals based on track cross and track error signals. It is therefore respectfully requested that the Examiner reconsider and withdraw the rejection.

On page 4 of the Office Action, the Examiner rejects claims 2-5 under 35 U.S.C. §112, second paragraph, as being indefinite since the Examiner believes that claim 2 is unclear as to how the second electrical signals are used with the TES in generating the seek direction detecting signal. The rejection is traversed, and reconsideration is respectfully requested.

For at least similar reasons, it is respectfully submitted that, consistent with the interview with the Examiner, claims 2-5 remain compliant with the requirements of 35 U.S.C. §112, second paragraph, and that the Examiner reconsider and withdraw the rejection of claims 2-5.

REJECTION UNDER 35 U.S.C. §103:

In the Office Action at pages 4-8, the Examiner rejects claims 1, 8, 9, 12-14, 16, 17, and 37-39 under 35 U.S.C. §103 in view of Kitamura et al. (U.S. Patent No. 5,986,996) and the device described on pages 1 through 3 in relation to FIGs. 1 and 2 of the instant application (hereinafter referred to as a "Other Device"). The rejection is respectfully traversed and reconsideration is requested.

As discussed with the Examiner in the interview, Kitamura et al. teaches a laser beam 7 passing through a hologram 6 and is focused by an objective lens 5 on an optical disk 1. There is no suggestion that the hologram produces an aberration for the light spot on the optical disk 1, and there is no suggestion as to whether additional spots are generated by the hologram and focused on the disk 1. Instead, Kitamura et al. teaches using a polarizer 9 and a laser diode 3 which are able to focus on disks 1a, 1b of different thicknesses. By controlling a polarization of light emitted by the diode 3, Kitamura et al. suggests being able to alter a numerical aperture using the polarizer 9 between 0.35 and 0.6. Further, the hologram 6 is not disclosed as splitting the beam into two spots on a same disk 1a, 1b, and instead discloses that the polarizer 9 is used to prevent the focusing of an outer portion of the light beam 7 on the disk 1b. (Col. 9, lines 40-45, col. 10, lines 33-67, FIG. 1). As such, Kitamura et al. does not suggest forming different light spots on a same disk 1a, 1b, or that one of the light spots has an aberration caused by the hologram 6.

Further, while Kitamura et al. suggests in col. 9, lines 49-62, that the reflected laser beam 7 has a generated conspicuous astigmatic aberration, Kitamura et al. teaches that the aberration is created after the light beam 7 has passed through the objective lens 5 to be diffracted at the hologram 6 into \pm 1st order beams. The \pm 1st order beams are focused onto the photo-detector array 4 such that the astigmatic aberration is generated for use in controlling an actuator. (Col. 9, lines 40-57, col. 11, lines 6-29; FIG. 1 of Kitamura et al.) However, Kitamura et al. does not suggest that the hologram 6 forms the aberration on the optical disk 1, or that there is an

advantage in so doing instead of or in addition to forming the aberration on the photo-detector array 4.

Lastly, the Other Device is not relied upon as disclosing and does not disclose an aberration formed on an optical disk 1 as shown in FIG. 1 of the instant application, or that the track cross signal (TCS) or seek direction detecting signal is generated without a second sub-beam spot. As such, it is respectfully submitted that the combination of Kitamura et al. and the Other Device does not disclose or suggest, among other features, "a light dividing unit to divide an incident light beam into a main beam and a sub-beam to form on an optical disk a main beam spot and a single sub-beam spot having an optical aberration, the main beam and the sub-beam being focused in a track direction of the optical disk, the light dividing unit being disposed so that a direction of the optical aberration is formed on the optical disk in a radial direction of the optical disk" as recited in claim 1.

For at least similar reasons, it is respectfully submitted that the combination of Kitamura et al. and the Other Device does not disclose or suggest the invention as recited in claims 8 and 37.

Additionally, on page 9 of the Office Action, the Examiner asserts that stripe shaped photo-diodes 13c, 13f of Kitamura et al. correspond to the inner light receiving portions recited in claim 13. As a point of clarification, claim 13 recites, among other features, "inner and outer light receiving portions aligned along a radial direction of the optical disk," with "the inner light receiving portions being disposed between the outer light receiving portions." As shown in FIG. 1 of Kitamura et al., the photo-diodes 13c, 13f are disposed in a row along a tangential direction of the track of the optical disk 1. Photo-diodes 13e and 13d are disposed between the photo-diodes 13c, 13f in the tangential direction. (Col. 11, lines 8-19; FIG. 1 of Kitamura et al.) As such, Kitamura et al. does not suggest that the photo-diodes 13e and 13d are disposed between the photo-diodes 13c, 13f in the radial direction. Since the Other Device is not relied upon and does not disclose such a feature, it is respectfully submitted that the combination of Kitamura et

al. and the Other Device does not disclose or suggest the invention of claim 13.

Claims 9, 12, 14, 16, 17, 38, and 39 are deemed patentable due at least to their depending from corresponding claims 8 and 37.

On pages 8-9 of the Office Action, the Examiner rejects claim 18 under 35 U.S.C. §103 in view of Kitamura et al., the Other Device, and Lee et al. (U.S. Patent No. 5,706,263). The rejection is respectfully traversed and reconsideration is requested.

Even assuming *arguendo* that the Examiner is correct as to the features of Lee et al. and that the combination is correct, it is respectfully submitted that the Examiner does not rely upon Lee et al. as otherwise curing the above-noted deficiency of Kitamura et al. and the Other Device as applied to claims 8 and 13, from which claim 18 depends. As such, it is respectfully submitted that the combination of Kitamura et al., the Other Device, and Lee et al. does not disclose or suggest the invention recited in claim 18 due at least to the combination not disclosing or suggesting the invention recited in claim 8 or 13.

PATENTABILITY OF NEW CLAIMS:

Claim 40 is deemed patentable due at least to Kitamura et al. not disclosing an aberration or a sub-beam as set forth above in relation to the rejection of claim 1, and since the Other Device shown in FIGs. 1 and 2 of the instant application teaches sub-beams focused at least partially on the adjacent tracks, whereas claim 40 recites, among other features, "a light dividing unit to divide the light beam into a main beam to be formed on a first track of the optical disk and a sub-beam to be formed on the first track of the optical disk, the sub-beam comprising a spot focusing on the first track without being focused on a second track disposed radially apart from the first track and an optical aberration that is focused on at least the second track on the optical disk."

For at least similar reasons and as similar noted with the Examiner in the interview, it is respectfully submitted that Kitamura et al. does not disclose or suggest, among other features, "a light dividing unit to divide an incident light beam into a main beam and a sub-beam to form

on an optical disk a main beam spot and a sub-beam spot, the main beam and the sub-beam being focused in a track direction of the optical disk," "a first optical detector having light receiving portions to receive the main beam reflected from the optical disk", "a second optical detector to receive the sub-beam reflected from the optical disk," "a first signal processing portion to detect a track error signal from the first electrical signals," "a second signal processing portion to generate the seek direction detecting signal from the second electrical signals and the track error signal such that only the main and the sub-beam spots are used to generate the seek direction detecting signal" as recited in claim 42.

Claim 41 is deemed patentable due at least to its depending from claim 40.

CONCLUSION:


In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any additional fees associated with the filing of this Response, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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